

Lane, Jackie

From: LEE, LILY
Sent: Monday, January 30, 2017 9:40 AM
To: vincentcovello@yahoo.com; Julie.Froelich@ch2m.com; Yogi, David; juanita.bacey@dtsc.ca.gov; Hay Scott
Cc: Lane, Jackie; Kellie.Koenig@ch2m.com; Kimberly.Henderson@CH2M.com; derek.j.robinson1@navy.mil; Bill Franklin (william.d.franklin@navy.mil)
Subject: Potential public questions from Thurs 1/26 Poster 3 conference call
Attachments: Hunters Point media responses 2016.docx; Rad risk Artist Studios Bldg 606_10-18-16.pdf; Parcel A of the former Hunters Point Naval Shipyard and Radiation_10-18-16.pdf; Hunters Pt radiation cleanup standards desk statement 8-25-2016.pdf; Summary of Concerns 12-20-2017 EJ Task Force Mtg w agencies.docx

Dear Dr. Covello,

Thank you for the excellent training today about Poster 3. Especially since you are calling from London in the middle of the night. You asked me to send the potential questions from the community as followup to the call. Here my notes from Thursday's call with those questions that came up during the call.

- How did the Navy discover the problem?
- What was the total number of samples?
- What did the Navy do with the samples when they reviewed them?
- What were the consequences of their wrongdoing? Were they punished? Why aren't they fired?
- What is radiation?
- How do the levels found at Hunters Point compare with background levels?
- What are background levels at Hunters Pt?
- I don't trust the Navy because they kill babies.
- I've had X health effect (e.g. hair falling out). Is that going to happen to me at Hunters Point?
- I or my friends or neighbors have cancer or died, and I think it's from radiation.
 - o Answer – we set standards that are protective against these and other potential health effects, and we are making sure that the cleanup will meet that standard through this review . . . [give key messages]
 - o Answer – Refer them to their physician, to “protecting the public” poster, to Dr. Higley

In addition, as I said on the call, we have sent to Kellie already some write-ups of answers EPA already sent to press or members of the public in response to questions we have already received. I have attached those for reference.

USEPA Region 9 evaluation of Hunters Point Naval Shipyard radiation cleanup standards August 25, 2016

The Hunters Point Naval Shipyard (HPNS) is a former military base in San Francisco, California. It was used by the Navy as a naval submarine and ship repair facility from 1945 until 1974 and was also the site of the Naval Radiological Defense Laboratory from 1948 to 1969. In 1989, U.S. EPA placed the Shipyard on its National Priorities List, which is a list of federal Superfund sites in the United States.

The Navy is the lead agency responsible for the investigation and cleanup of HPNS. As part of the process, EPA and its state regulatory agency partners (the California Department of Public Health and the California Department of Toxic Substances Control) oversee and enforce Navy compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (commonly called the Superfund law) to ensure the cleanup at HPNS protects human health and the environment. The Navy and regulatory agencies work together to decide how to address the contamination. The Navy also gathers community input through a public process.

EPA uses the best available science to develop guidance for cleaning up sites, such as HPNS, that are contaminated with radioactive materials. EPA's goal for the HPNS cleanup is to ensure that the community is protected from exposure to radiation and that the site can be used for work, recreation, and residential purposes.

EPA assesses the health effects of radiation at a site by calculating the "excess cancer risk" posed by radioactive contamination. Excess cancer risk is the additional probability that a person exposed to contamination will develop cancer over a lifetime. Superfund regulations in the National Contingency Plan have defined the protective range of excess cancer risk as a probability that a person exposed to radioactive and chemical contaminants will have between an additional one in ten thousand and a one in a million chance of developing cancer (technically known as the 10^{-4} to 10^{-6} cancer risk range). When calculating this range, EPA uses assumptions about exposure that are much higher than most people's actual exposure. This means that EPA overestimates risk to most people to make sure that cleanups are sufficiently protective.

EPA reviews the Navy's cleanup report for each survey unit (small area of land or part of a building) of HPNS using the current version of the EPA risk model to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. This ensures that any land that is transferred to the City of San Francisco for new use meets appropriate levels for protectiveness with regard to radiation. To provide additional protection, the Navy is installing a protective cover over the whole site. The Navy is also developing a plan, which EPA will review, that ensures the Navy or City will maintain and inspect the cover indefinitely.

EPA's risk models have changed over time as radiation science continues to improve. EPA has incorporated the latest models into its review process to ensure the HPNS cleanup continues to be protective of human health and the environment. EPA has reviewed the Navy's past HPNS cleanup reports, applying the current EPA risk model, and found that the Navy's earlier work had achieved the cleanup level needed to protect human health and the environment.

University of California at Santa Cruz Presentation

On April 21, 2016, a small group of faculty and students from the University of California at Santa Cruz gave a presentation about the HPNS cleanup at an Environmental Justice Task Force Meeting held in the Bayview-Hunters Point neighborhood. The presentation had some inaccuracies and left out some relevant information, as noted below.

The presentation criticized EPA's reliance on 2006 cleanup standards.

- In fact, EPA uses the latest version of EPA's risk model to review each Navy radiation cleanup report for individual sections of the site as they are drafted. ("Latest version" refers to whichever version is current at the time that EPA reviews each report.)

The presentation suggested that the Navy should be using standards with exposure scenarios that reflected only one end of the range that EPA considers protective.

- In fact, the Navy and EPA assessments of cleanup needs are already based on scenario assumptions of exposure that are higher than would be realistic. In part, this is because the assumptions of exposure do not take into account the protective cover. In addition, EPA considers the protective range to refer to a probability that a person exposed to radioactive and chemical contaminants will have between one in ten thousand and one in a million greater chance of developing cancer. The presentation did not reflect this complete range. Finally, the Navy routinely cleans up radiation to levels within the protective range, even with the current version of worst case scenario assumptions.

The presentation criticized the fact that the Navy's documents reference several different cleanup requirements

- In fact, Navy cleanup documents showed requirements from multiple agencies that might apply to particular cleanups. The Navy must meet requirements specific to each of those agencies – including the most strict. Some of the standards that the Navy must meet may be less strict than EPA's, but the Navy still referenced them in the documents to show that by complying with stricter standards, they also meet other requirements. The final cleanup requirements were selected in several Records of Decision that were presented in a series of public meetings, allowed at least 30 days for public comment, and then finalized.

For any questions, about the Navy's cleanup, please contact Derek Robinson, Base Realignment and Closure Environmental Coordinator, at

For any questions about the USEPA's oversight role, please contact Lily Lee, Cleanup Project Manager, at 415-947-4187 or lee.lily@epa.gov.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105**

Parcel B Artist Studios (Buildings 104, 115, 116, 117, 125) and the City/County of San Francisco Police Department (Building 606) of the Hunters Point Naval Shipyard

This information addresses concerns about potential current exposure to radiation at the above locations on the Hunters Point Naval Shipyard site. Below is what EPA knows about the history and cleanup at these locations that led to our approval for the lease of these areas:

- To date, no specific allegations have been made regarding the integrity of the cleanup work conducted specifically in areas of the artist studios or Building 606 that give us any reason to question EPA's prior decision to approve the lease of these buildings.
- The current artist studios on Parcel B had formerly been used for barracks, schools, a cafeteria, and other non-industrial uses. Therefore, EPA has never had concerns about radiological impacts in these buildings. The Navy has removed sanitary sewer and storm drain lines near these buildings.
- Before Building 606 was constructed, Building 503 had been located in its place and had the potential for radiological impact. The Navy has removed sanitary sewer and storm drain lines and soil under and near Building 606. The Navy scanned soil from beneath Building 606 and found no elevated radiation levels.
- In 2002, EPA conducted a radiological scanner van survey of navigable roads on parts of the Shipyard including near the Artist Studios and Building 606. All of the anomalies detected during the scan were attributable to natural occurring sources at levels consistent with what would normally be found in the environment.
- EPA and other regulatory agencies found Buildings 104, 115, 116, 117, 125, and 606 suitable for lease in 2008. If it would be helpful, we can provide copies of the Finding of Suitability to Lease.

The Navy is the lead agency responsible for the investigation and cleanup of the Shipyard and holds the Administrative Record for the site. EPA and its state regulatory agency partners oversee and enforce Navy compliance with Superfund requirements to ensure the cleanup at the Shipyard protects human health and the environment. For more information on the Shipyard investigation and cleanup, contact Derek Robinson, Navy Base Realignment and Closure (BRAC) Environmental Coordinator: 619-524-6026, derek.j.robinson1@navy.mil. If you would like to discuss EPA's oversight role, please contact Lily Lee, EPA project manager at 415-947-4187 or lee.lily@epa.gov or Jackie Lane, EPA Community Involvement Coordinator at 415-972-3236 or lane.jackie@epa.gov.

October 12, 2016



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Parcel A of the Former Hunters Point Naval Shipyard ("Shipyard"):

The information below addresses questions about potential current exposure to radiation at Parcel A. Here is what EPA knows about the history and cleanup of Parcel A that led to the removal of this portion of the Shipyard property from the Superfund National Priorities List and to approve the Navy's transfer of Parcel A to the City of San Francisco:

- We have no reason to question any cleanup work performed on Parcel A. To date no allegations have been made regarding the integrity of any of the cleanup work conducted at Parcel A.
- Historically, the majority of Parcel A was used for residences and administrative offices, not industrial activities.
- The only radiological materials found at Parcel A were sandblast grit and firebricks. These have been removed. Former Buildings 322, 816, and 821 had potential for radiological contamination. The Navy scanned all three buildings and did not find radiological contamination above required cleanup levels. Buildings 322 and 816 were demolished and removed. Building 821 is located on Crisp Road, not in the developed portion of Parcel A. No other sources of radiological contamination were identified during the investigation or cleanup of Parcel A.
- In 2002, EPA conducted a radiological scanner van survey of Parcel A and navigable roads on other parts of the Shipyard. All of the anomalies detected during the scan were attributable to natural occurring sources at levels consistent with what would normally be found in the environment.
- Parcel A was removed from the Superfund National Priorities List in 1999 and was transferred in 2004. If it would be helpful, EPA can provide copies of the Finding of Suitability to Transfer and the de-listing decision.

The Navy is the lead agency responsible for the investigation and cleanup of the Shipyard and holds the Administrative Record for the site. EPA and its state regulatory agency partners oversee and enforce Navy compliance with Superfund requirements to ensure the cleanup at the Shipyard protects human health and the environment. For more information on the Shipyard investigation and cleanup, contact Derek Robinson, Navy Base Realignment and Closure (BRAC) Environmental Coordinator: 619-524-6026, derek.j.robinson1@navy.mil. If you would like to discuss EPA's oversight role, please contact Lily Lee at 415-947-4187 or lee.lily@epa.gov or contact Jackie Lane at 415-972-3236 or lane.jackie@epa.gov.

October 2, 2016

EPA Region 9 - Responses to media queries on Hunters Point Naval Shipyard for 2016

Chris Roberts, San Francisco Magazine

Response sent 12/1/16

Question: Do we know when the Navy plans to hire its contractor? And do we know exactly what the contractor will be reviewing -- Tetra Tech's work, but all of it? Some of it? And in the meantime, Tetra Tech is still on-site at work at HPNS, correct?

Answer: Here is the Navy's media contact for Hunters Point: William Franklin: (619) 524-5433, william.d.franklin@navy.mil

Response sent 11/29/16

Question: Via a phone call, Chris Roberts asked for an update on the Hunters Point briefing that SF officials had requested of EPA and the Navy. Specifically, whether it had happened yet and if there were any public documents available related to it.

Answer: On November 3, 2016, senior managers from the Navy, US Environmental Protection Agency and the State of California Department of Toxic Substances Control provided a briefing on efforts to address issues surrounding the Hunters Point Naval Shipyard radiological cleanup to Mayor Edwin Lee, Supervisor Malia Cohen, and Robert Edmonson, Chief of Staff to Congresswoman Pelosi, who joined by phone.

The Navy announced that it would hire a third party independent contractor to review radiological work conducted by Tetra Tech EC, Inc., at the Hunters Point Naval Shipyard. This review will determine what aspects of that work require additional assessment, such as extra sampling. The additional assessment will begin after regulatory approval of the work plan. All participants agreed to monthly meetings with the Mayor and Supervisor to monitor progress. The agencies are continuing to coordinate with one another on this issue.

Attached is a letter, dated November 22nd, from Congresswoman Pelosi to the Navy and EPA, which was sent in response to the November 3rd meeting.



HPNS Cleanup
Followup Navy EPA

Response sent 10/20/16

Question: When you say the "whole site," do you mean all parcels at the Shipyard?

Answer: Yes, since 2009, all the parcels at the Shipyard have been required to install a protective cover.

Please note, Parcel A was removed from the Superfund National Priorities List in 1999 and transferred from the Navy in 2004. As such, it was not impacted by the protective cover decision in 2009. However, no allegations have been made regarding the integrity of any of the cleanup work conducted at Parcel A. The property had previously been used primarily for residential and administrative purposes and the limited radiological materials found there were removed before transfer.

Question: Where can we learn more about the nature of the protective cover?

Answer: Protective covers can be asphalt and concrete surfaces, building foundations, or a two-foot thick soil cover. Details about each parcel's protective cover are provided in the Remedial Design documents found here:

http://www.envirostor.dtsc.ca.gov/public/search.asp?CMD=search&city=San+Francisco&zip=&county=&case_number=&business_name=&FEDERAL_SUPERFUND=True.

Question: And I want to be clear -- the initial PRGs proposed by the Navy are different than the current, default PRGs. We are saying that even though the Navy used the initial PRGs which are different than current defaults, the cleanup achieved is compliant with those defaults?

Answer: Yes, the cleanup is compliant using PRGs calculated at the default level.

EPA routinely reviews the Navy's cleanup reports for each survey unit (the name for a small area of land or part of a building sampled) of the Shipyard using the latest version of the EPA risk model to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. ("Latest version" refers to whichever version is current at the time that EPA reviews each report.) As a screening level evaluation, EPA uses the default assumptions, an exposure scenario much higher than realistic for the expected future use at the former Shipyard, and has found all cleanups achieved the protective cancer risk range.

Also, in 2016, EPA reviewed the Navy's past Shipyard cleanup reports, applying the current EPA PRG Calculator risk model. This was done both using default assumptions and using site-specific factors based on future land uses at the Shipyard, a more realistic scenario. EPA found that the past cleanups also achieved the protective range, even using the default assumptions in the current version of the risk model.

Question: Whose data are we using to make that assertion? The Navy's? Did the EPA also conduct testing to ensure the Navy's data is accurate?

Answer: Yes, we are using the Navy's data. The Navy is the lead agency responsible for the investigation and cleanup of the Shipyard. EPA and its state regulatory agency partners oversee and enforce Navy compliance with the Superfund law to ensure the cleanup at the Shipyard

protects human health and the environment. With the Navy as the lead, EPA relies on their adherence to established quality assurance protocols. However, both EPA and the California Department of Public Health have routinely conducted field audits and limited independent scans, sampling, and/or analysis for radionuclides at HPNS. These efforts did not identify any issues that made EPA question the Navy's data.

Response sent 10/17/16

Question: Can you tell me what the site-specific information is that I omitted from the EPA's PRG calculator?

Answer: The site-specific information for Hunters Point Naval Shipyard is that the Navy is installing a protective cover over the whole site and that future occupants will only be allowed to grow plants (including those that would be eaten) in raised beds. However, even if the PRG is calculated at the default level, the Navy's cleanup still brings radiation to levels within the protective range.

Response sent 10/12/16

Question: Do you know if the EPA gave the City and County of SF a response to the formal letter city leaders sent on 9/19? A copy is attached. Do we know if city officials received the briefing?

Response: EPA is currently working with the mayor's office to set up a briefing for the city.

Question: Does EPA know which agencies are investigating the data given to the Navy by Tetra Tech?

Response: EPA is aware of an investigation by the Nuclear Regulatory Commission (described here: <http://www.nrc.gov/docs/ML1621/ML16211A133.pdf>) and another by the Navy. Here is contact information for both groups:

Diane Screnci, NRC public affairs officer: [610-337-5330](tel:610-337-5330)

William Franklin, Navy public affairs officer, (619) 524-5433, william.d.franklin@navy.mil.

Question: I have a question regarding the preliminary remediation goals in the HPNS cleanup and the PRGs I saw online using the EPA's own calculator at <https://epa-prgs.ornl.gov/radionuclides/>. It looks like the PRGs in the HPNS cleanup standards and the PRGs on the EPA's website are different. Attached for your convenience is a page from the HPNS basewide cleanup memo, and the PRGs for the same radionuclides of concern from the EPA's own calculator. Can you help me explain why they are different? It appears the levels of

radionuclides allowed in the table in the basewide RAD memo are higher than in the EPA's PRG calculator.

Response: The PRG calculator can be used with either default values or values that have been tailored with site-specific information. The PRG Users Guide (https://epa-prgs.ornl.gov/radionuclides/prg_guide.html) recommends modifying the default values using site-specific information to calculate a more realistic estimate of risk. It appears that you have used default values in your calculations, which would explain the discrepancies. In addition, Superfund regulations in the National Contingency Plan have defined the protective range of excess cancer risk as a probability that a person exposed to radioactive and chemical contaminants will have an additional one in ten thousand to a one in a million chance of developing cancer (technically known as the 10^{-4} to 10^{-6} cancer risk range). Your calculations do not reflect this complete range.

Response sent 10/3/16

Question: Can we confirm what standards the HPNS cleanup are held to? Is it the 1974 AEC standards and the RESRAD calculations, or is it something else?

EPA uses the best available science to develop guidance for cleaning up sites, such as Hunters Point Naval Shipyard (HPNS), that are contaminated with radioactive materials. EPA's goal for the HPNS cleanup is to ensure that the community is protected from exposure to radiation and that the site can be used for work, recreation, and residential purposes.

To that end, EPA determines protectiveness based on risk. Other agencies may determine protectiveness based on dose, measured in millirems or other similar units. EPA's approach is to assess the health effects of radiation at a site by calculating the "excess cancer risk" posed by radioactive contamination. Excess cancer risk is the additional probability that a person exposed to contamination will develop cancer over a lifetime. Superfund regulations in the National Contingency Plan have defined the protective range of excess cancer risk as a probability that a person exposed to radioactive and chemical contaminants will have an additional one in ten thousand to a one in a million chance of developing cancer (technically known as the 10^{-4} to 10^{-6} cancer risk range). When calculating this range, EPA uses assumptions about exposure that are higher than people's actual exposure. This means that EPA overestimates the risk to make sure that cleanups are sufficiently protective.

EPA reviews the Navy's cleanup report for each survey unit (small area of land or part of a building) of HPNS using the current version of the EPA risk model, not RESRAD, to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. This ensures that any land that is transferred to the City of San Francisco for new use meets appropriate levels for protectiveness with regard to radiation.

EPA's risk models have changed over time as radiation science continues to improve. EPA has incorporated the latest models into its review process to ensure the HPNS cleanup continues to

be protective of human health and the environment. EPA has reviewed the Navy's past HPNS cleanup reports, applying the current EPA risk model, and found that the Navy's earlier work had achieved the cleanup level needed to protect human health and the environment.

Navy cleanup documents showed requirements from multiple agencies that might apply to particular cleanups. The Navy must meet requirements specific to each of those agencies – including those that are most strict. Some of the standards that the Navy must meet may be more strict or less strict than EPA's, but the Navy still referenced them in the documents to show that by complying with the strictest standards, they also meet other requirements. The final cleanup requirements were selected in several Records of Decision that were presented in a series of public meetings, allowed at least 30 days for public comment, and then finalized.

Question: Could we find out what the inaccuracies are and what the omitted key information is?

The items in the UCSC presentation that EPA had concerns with include the following:

The presentation criticized EPA's reliance on 2006 cleanup standards. In fact, EPA uses the latest version of EPA's risk model to review each Navy radiation cleanup report for individual sections of the site as they are drafted. ("Latest version" refers to whichever version is current at the time that EPA reviews each report.)

The presentation suggested that the Navy should be using standards with exposure scenarios that reflected only one end of the range that EPA considers protective. In fact, the Navy and EPA assessments of cleanup needs are already based on scenario assumptions of exposure that are higher than would be realistic. As stated above, Superfund regulations define the protective range to refer to a probability that a person exposed to radioactive and chemical contaminants will have an additional one in ten thousand to a one in a million chance of developing cancer. The presentation did not reflect this complete range. Finally, the Navy routinely cleans up radiation to levels within the protective range, even with the current model and with a scenario of exposure higher than realistic at this site.

The presentation criticized the fact that the Navy's documents reference several different cleanup requirements. In fact, Navy cleanup documents showed requirements from multiple agencies that might apply to particular cleanups. The Navy must meet requirements specific to each of those agencies – including the most strict. Some of the standards that the Navy must meet may be less strict or more strict than EPA's, but the Navy still referenced them in the documents to show that by complying with the strictest standards, they also meet other requirements. The final cleanup requirements were selected in several Records of Decision that were presented in a series of public meetings, allowed at least 30 days for public comment, and then finalized.

Response sent 9/22/16

Question: Attached is a powerpoint presentation put together by academics at UC Santa Cruz. It has a few key findings, the summation of which is that the Navy is using cleanup standards that are outdated or otherwise more lax than current standards.

Specifically, the findings are:

- *The Navy is using preliminary remediation goals, or PRGs, from 1991, when there are more current standards available;
- *The Navy is using a regulatory guide from the Atomic Energy Commission from 1974, when that commission no longer exists and where there are more updated regulatory guides;
- *The Navy's cleanup standards allow exposure of 25 millirems of radiation per year, when the EPA says no more than 12 millirem is the standard;
- *The Navy's cleanup standards allow for a cancer risk of one in ten thousand, or 1×10^{-4} , when the normal CERCLA goal is 1×10^{-6} , or one in a million;
- *The Navy is using a RESRAD calculator to determine risks, when the EPA says that is not to be used.

That's about it. Let me know if EPA was aware of this presentation and if it can offer comment.

Answer: Thank you for your question about the UC Santa Cruz presentation on Hunters Point Naval Shipyard. Here is some background information about it:

The Navy is the lead agency responsible for the investigation and cleanup of HPNS, because it is a former military site. However, the U.S. Environmental Protection Agency and its state regulatory agency partners (the CA Dept. of Public Health and the CA Dept. of Toxic Substances Control) oversee and enforce the Navy's compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (commonly known as Superfund), to ensure the cleanup protects human health and the environment.

On April 21, 2016, a small group of faculty and students from UC Santa Cruz gave a presentation about the HPNS cleanup at an Environmental Justice Task Force Meeting held in the Bayview-Hunters Point neighborhood; EPA was in attendance. The presentation had inaccuracies and left out some key information. EPA has had several meetings with Dan Hirsch (UC Santa Cruz), Greenaction, and the Environmental Justice Task Force, to go over issues we found with the presentation and discuss the concerns raised by these groups.

EPA uses the best available science to evaluate the protectiveness of cleanup at sites, such as HPNS, that are contaminated with radioactive materials. EPA remains committed to ensuring that the Bayview-Hunters Point community is protected from exposure to

radiation and that the HPNS site can be used for work, recreation, and residential purposes.

Alena Naiden, San Francisco State University student

Response sent 12/8/16

The questions I have center around the ongoing investigation on Tetra's misrepresentation of data delivered to the Navy.

Question: How did the misrepresentation come to light?

Answer: In 2012, the Navy's internal quality control review of work by its contractor, Tetra Tech, discovered discrepancies from the results they would have expected in some Hunters Point Naval Shipyard soil samples. Subsequently, Tetra Tech conducted an investigation, resampled the areas of concern, and excavated soil that had levels of contamination above health-based cleanup goals. Tetra Tech summarized their actions in a report dated April 2014. In addition, in February, 2016, the Nuclear Regulatory Commission issued a Notice of Apparent Violation to Tetra Tech EC, Inc. (described here: <http://www.nrc.gov/docs/ML1604/ML16042A074.pdf>)

For additional details, please contact the Navy; their media contact for Hunters Point is William Franklin: (619) 524-5433, william.d.franklin@navy.mil.

And here is contact information for NRC: Diane Screnci, public affairs officer: 610-337-5330

Question: Who is investigating it? What are the next steps in the process?

Answer: In the Superfund Program, EPA and its state regulatory agency partners (the California Department of Public Health and the California Department of Toxic Substances Control) oversee and enforce the Navy's compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (commonly known as Superfund), to ensure the cleanup protects human health and the environment. EPA met with officials from the Navy and CA DTSC on July 14, 2016. At that time, it was agreed that the Navy would not propose any further transfers of property from the Hunters Point Naval Shipyard until ongoing investigations into work done by Navy contractor, Tetra Tech, were resolved. (see attached letter)

The Navy has announced that it would hire a third party independent contractor to review radiological work conducted by Tetra Tech at the Hunters Point Naval Shipyard. This review will determine what aspects of that work require additional assessment, such as extra sampling. The additional assessment will begin after regulatory approval of the work plan. The agencies are continuing to meet regularly to coordinate with one another on this issue. Please contact the Navy for additional details.

In addition, the Nuclear Regulatory Commission concluded its own investigation recently (described here: <http://www.nrc.gov/docs/ML1628/ML16285A465.pdf>).

EPA's site management team continues to investigate all of the allegations to protect human health and safety and ensure that the clean-up has been adequately performed.

Please contact the Navy and NRC for additional details on their investigations.

How can it possibly affect the community?

EPA uses the best available science to develop guidance for cleaning up sites, such as Hunters Point Naval Shipyard, that are contaminated with radioactive materials. If radiation exposure is too high, it can cause damage to living tissue and DNA, which can lead to cancer or other health effects. The risk of cancer increases as exposure to radiation increases. EPA's role for the Hunters Point Naval Shipyard cleanup is to ensure that the community and workers are protected from exposure to radiation and that the site can be used for work, recreation, and residential purposes.

EPA has also provided fact sheets to the current residents on Parcel A of the Hunters Point site and leasees who work at the shipyard, which are attached.



Rad risk Artist
Studios Bldg 606_1(former Hunters Point)



Parcel A of the



9 13 2016 EPA DTSC
Ltr to Navy re Tetra T

Kathleen Pender, San Francisco Chronicle

Response sent 10/18/16

Question: does this sound right...enough?

The Shipyard is a Superfund site, with the Navy responsible for cleanup. Lennar does not acquire any property there until the U.S. Environmental Protection Agency has certified it as safe. It acquired the Hilltop property from the city in 2004, and began to undertake infrastructure. Other areas are still undergoing remediation.

Answer: Thank you for sending your paragraph for review. Please see below for some clarifying information. Let me know if you have additional questions.

Most of the former Hunters Point Naval Shipyard (HPNS) remains a Superfund site. Parcel A of the former Shipyard, which includes hilltop property that is now being developed, was removed from the Superfund National Priorities List in 1999 and transferred in 2004. Therefore Parcel A is no longer part of the Superfund site.

The Navy is the lead agency responsible for the investigation and cleanup of HPNS. As part of the process, EPA and its state regulatory agency partners (the California Department of Public Health and the California Department of Toxic Substances Control) oversee and enforce Navy compliance with the Superfund law to ensure the cleanup at HPNS protects human health and the environment.

Parcels of land are transferred for development only after the Navy has finished all cleanup work and EPA and other regulatory agencies have agreed that the cleanup is complete.

For background reference, here is a link to a fact sheet about the transfers process:

[https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/8fef336269a7af3a88257da900805405/\\$FILE/24523543.pdf/Hunters%20Point%20Parcel%20Transfer%20Overview%20Final_11-17-14%20LL.pdf](https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/8fef336269a7af3a88257da900805405/$FILE/24523543.pdf/Hunters%20Point%20Parcel%20Transfer%20Overview%20Final_11-17-14%20LL.pdf)

Follow up response from reporter:

Here's what I'm saying now:

Most of the former naval shipyard remains a Superfund site, with the Navy responsible for cleanup. Parcels of land are transferred for development only after the U.S. Environmental Protection Agency and its state partners have agreed that cleanup is complete. The Hilltop property was taken off the Superfund list in 1999. Lennar acquired it in 2004 and began infrastructure development.

John Shutt, San Francisco Bay View

Response sent 9/22/16

Regarding your request for a comment on the July meeting with the Navy, EPA stands by the summary provided in the Sept. 13 letter.

As for which agencies are investigating Tetra Tech's work, the ones we know about are those by the Nuclear Regulatory Commission (described here:

<http://www.nrc.gov/docs/ML1621/ML16211A133.pdf>) and the Navy. Here is contact information for both groups:

- Diane Screnci, NRC public affairs officer: 610-337-5330
- William Franklin, Navy public affairs officer, (619) 524-5433, william.d.franklin@navy.mil.

Follow-up question: Is the EPA also investigating?

Answer: Any ongoing investigation would be of a confidential nature and therefore not something we could discuss.

Ted Goldberg, KQED

Response sent 9/20/16

Question: Is the transfer of land at Hunters Point from the Navy to San Francisco on hold due to safety concerns? And, just to be clear – when was it delayed and why.

Answer: Thank you for your query; please see below for our response. Also, in case you don't already have it, I am attaching a copy of the related letter from EPA and DTSC to the Navy.

U.S. EPA met with officials from the Navy and the California Department of Toxic Substances Control on July 14, 2016. At that time, it was agreed that the Navy would not propose any further transfers of property from the Hunters Point Naval Shipyard until ongoing investigations into work done by Navy contractor, Tetra Tech, were resolved. This decision was made in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (commonly called the Superfund law), to ensure the cleanup protects human health and the environment.



9 13 2016 EPA DTSC
Ltr to Navy re Tetra T

Elizabeth Wagner, NBC Bay Area

Response sent 10/19/16

Question: Can you please send me the letter that Rep. Nancy Pelosi sent to the EPA regarding Hunters Point?

Answer: Here you go (please see attached).



HPNS Cleanup
Concerns Tetra Tech

Response sent 9/23/16

Question: We are seeking comment to the Navy's agreement not to transfer any more land at Hunters Point until investigations into Tetra Tech are completed. We are on deadline and need a response asap today.

Answer: Regarding your request for a comments, EPA stands by the summary provided in the Sept. 13 letter

([https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/5723b916c5f3e5c08825802f0068cdda/\\$FILE/20829317.pdf/9%2013%202016%20EPA%20DTSC%20Letter%20to%20Navy%20re%20Tetra%20Tech.pdf](https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/5723b916c5f3e5c08825802f0068cdda/$FILE/20829317.pdf/9%2013%202016%20EPA%20DTSC%20Letter%20to%20Navy%20re%20Tetra%20Tech.pdf)).

Response sent 6/8/16

QUESTION: In an email below, you said the UCSC presentation had some inaccuracies. What specifically is inaccurate?

ANSWER: The UCSC presentation left out certain relevant information; some of the key omissions include the following:

- EPA has incorporated the latest version of EPA risk models into its review process to ensure the HPNS cleanup continues to be protective of human health and the environment. EPA has reviewed the Navy's past HPNS cleanup reports, applying the current EPA risk model, and confirmed that the Navy's earlier work had achieved the cleanup level needed to protect human health and the environment.

- The Navy and EPA assessments of cleanup needs are based on scenario assumptions of exposure that are higher than realistic. In part, this is because the assumptions of exposure do not take into account the protective cover that the Navy is installing.

- EPA considers the protective range to refer to a probability that a person exposed to radioactive and chemical contaminants will have between one in ten thousand (10^{-4}) and one in a million (10^{-6}) greater chance of developing cancer. The presentation did not reflect this complete range.

QUESTION: Does the EPA agree that Superfund law requires Hunters Point must be cleaned up consistent with EPA Superfund guidance?

ANSWER: EPA creates guidance to implement laws and regulations so that programs can be implemented more consistently. If site specific conditions suggest variation from EPA guidance would be more suitable, EPA has that flexibility.

QUESTION: The UCSC team said the Navy's cleanup has been using standards that violate this requirement and that the Navy is using standards that the EPA said should not be used. Does the EPA refute this?

ANSWER: EPA incorporates the latest EPA risk models into its review process to ensure the HPNS cleanup continues to be protective of human health and the environment. EPA has reviewed the Navy's past HPNS cleanup reports, applying the current EPA risk model, and confirmed that the Navy's earlier work had achieved the cleanup level needed to protect human health and the environment.

QUESTION: The UCSC team said the EPA either didn't catch or allowed the Navy to use cleanup standards that are much more lax than what the EPA has said is protective of public health. Does the EPA refute this?

ANSWER: EPA reviews the Navy's cleanup report for each survey unit (small area of land or part of a building) of HPNS using the current version of the EPA risk model to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. This ensures that any land that is transferred to the City of San Francisco for new use meets appropriate levels for protectiveness with regard to radiation. To provide additional protection, the Navy is installing a protective cover over the whole site. The Navy is also developing a plan for each parcel that is transferred to the City, which EPA will review, that ensures the Navy or City will maintain and inspect the cover indefinitely.

Response sent 6/6/16

Question: Since the EPA will not grant an interview request and has canceled our scheduled phone call, can you please send a statement that we can include in our report? Additionally, we ask that the EPA please answer in writing the questions below for clarification purposes.

We would like to have a conversation with the EPA for clarification purposes, as well. As stated, we are under deadline and a conversation and written material needs to happen by COB today.

We understand that the EPA's position is that the Navy is the lead agency responsible for the cleanup and investigation of Hunters Point.

- As the government entity that is in charge of federal superfund sites and the agency that is overseeing the Navy's cleanup of Hunters Point, why would the EPA defer to the Navy?
- Can't the Navy speak about its own oversight of the Navy?

Dan Hirsch of UCSC said that in a phone call with EPA Region 9 and EPA headquarters, the officials at EPA headquarters said his analysis is correct—the region should not have used a 25 millirem per year standard or the Atomic Energy Commission's 1974 guide, and that averaging contamination across a site should not be used.

- Can the EPA confirm that the EPA headquarters agreed that these standards should not be used?
- Can the EPA confirm that the Navy shouldn't have used the standards referenced above?

We received the EPA's background information below. You said the UCSC presentation had some inaccuracies and left out some relevant information.

- What did the UCSC presentation include that was correct?
- Is the UCSC group correct in that the EPA should not have allowed the Navy to use the cleanup standards referenced above?
- Is the EPA saying that even if the Navy cleaned up to the standards referenced above, the EPA believes the risk that remains after the cleanup is still acceptable from a public health standpoint?

Isn't it true that for the cleanup of buildings and other structures, and equipment and waste, the Navy used a standard of 25 millirem per year and the Atomic Energy Commission's 1974 Regulatory Guide 1.86?

Isn't it true that EPA has repeatedly said that 25 millirem per year is not protective of public health and should not be used as a cleanup standard at Superfund sites?

- If so, why did the EPA allow the Navy to use that standard?

Isn't it true that EPA generally does not approve the use of the 1974 AEC Regulatory Guide at Superfund cleanups?

- If so, why did the EPA allow the Navy to use that standard?

Isn't it EPA's policy that Superfund cleanups at federal facilities are to employ EPA's Preliminary Remediation Goals?

- Why did the EPA allow the Navy to instead employ the non-EPA RESRAD model for estimating risk?

Isn't it true that EPA's guidance prohibits averaging contamination across an area like Hunters Point?

Please explain what the Navy's "protective cover" is.

Please explain what each of the EPA's risk models are.

Answer: Below are answers to your follow-up questions about EPA's oversight role and the cleanup standards used at Hunters Point Naval Shipyard (HPNS).

EPA helps protect human health and the environment by managing the cleanup of hazardous waste sites across the nation. In the case of former military sites, such as HPNS, the Department of Defense is the lead for the investigation and cleanup. In overseeing the Navy's cleanup of Hunters Point, EPA's goal is to ensure that the community is protected from exposure to radiation and that the site can be used for work, recreation, and residential purposes.

Because the Navy is the lead for HPNS, EPA suggested that NBC Investigative News direct its request for an on-camera interview to the Navy. EPA has provided written information about its oversight role and remains willing to answer follow-up questions.

You asked about the Navy's reference to a 25 millirem per year standard. EPA does not express cleanup standards in terms of millirem per year, which is a dose-based approach, but instead evaluates protectiveness in terms of risk. Even though the Navy's documents reflect a dose-based approach, EPA in its oversight capacity independently reviews the Navy's cleanup reports to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. EPA has confirmed that the Navy's cleanup meets EPA standards.

Regarding averaging across the site, the actual exposure from radionuclides is based on looking at concentrations from multiple locations across an area, not from just a single point. Therefore, EPA is using the standard approach in the "Multi-Agency Radiation Survey and Site Investigation Manual" (MARSSIM). This approach is widely used by multiple agencies, including EPA.

The protective cover is a part of the cleanup that is required throughout the HPNS. The cover provides a physical barrier that can consist of asphalt, a soil cap at least two feet thick, or a concrete building foundation.

The EPA's risk model is called the Preliminary Remediation Goal (PRG) Calculator. More information about this model is available at this website: <https://epa-prgs.ornl.gov/radionuclides/>

Response sent 6/3/16

Please see below for information about our work at Hunters Point.

The Hunters Point Naval Shipyard (HPNS) is a former military base in San Francisco, California. It was used by the Navy as a naval submarine and ship repair facility from 1945 until 1974 and was also the site of the Naval Radiological Defense Laboratory from 1948 to 1969. In 1989, U.S. EPA placed the Shipyard on its National Priorities List, which is a list of federal Superfund sites in the United States.

The Navy is the lead agency responsible for the investigation and cleanup of HPNS. As part of the process, EPA and its state regulatory agency partners (the California Department of Public Health and the California Department of Toxic Substances Control) oversee and enforce Navy compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (commonly called the Superfund law) to ensure the cleanup at HPNS protects human health and the environment. The Navy and regulatory agencies work together to decide how to address the contamination. The Navy also gathers community input through a public process.

EPA uses the best available science to develop guidance for cleaning up sites, such as HPNS, that are contaminated with radioactive materials. EPA's goal for the HPNS cleanup is to ensure that the community is protected from exposure to radiation and that the site can be used for work, recreation, and residential purposes.

EPA assesses the health effects of radiation at a site by calculating the "excess cancer risk" posed by radioactive contamination. Excess cancer risk is the additional probability that a person exposed to contamination will develop cancer over a lifetime. Superfund regulations in the National Contingency Plan have defined the protective range of excess cancer risk as a probability that a person exposed to radioactive and chemical contaminants will have between an additional one in ten thousand and a one in a million chance of developing cancer (technically known as the 10^{-4} to 10^{-6} cancer risk range). When calculating this range, EPA uses assumptions about exposure that are higher than people's actual exposure. This means that EPA overestimates risk to make sure that cleanups are sufficiently protective.

EPA reviews the Navy's cleanup report for each survey unit (small area of land or part of a building) of HPNS using the current version of the EPA risk model to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. This ensures that any land that is transferred to the City of San Francisco for new use meets appropriate levels for protectiveness with regard to radiation. To provide additional protection, the Navy is installing a protective cover over the whole site. The Navy is also developing a plan, which EPA will review, that ensures the Navy or City will maintain and inspect the cover indefinitely.

EPA's risk models have changed over time as radiation science continues to improve. EPA has incorporated the latest models into its review process to ensure the HPNS cleanup continues to be protective of human health and the environment. EPA has reviewed the Navy's past HPNS cleanup reports, applying the current EPA risk model, and found that the Navy's earlier work had achieved the cleanup level needed to protect human health and the environment.

University of California at Santa Cruz Presentation

On April 21, 2016, a small group of faculty and students from the University of California at Santa Cruz gave a presentation about the HPNS cleanup at an Environmental Justice Task Force Meeting held in the Bayview-Hunters Point neighborhood. The presentation had some inaccuracies and left out some relevant information, as noted below.

The presentation criticized EPA's reliance on 2006 cleanup standards.

In fact, EPA uses the latest version of EPA's risk model to review each Navy radiation cleanup report for individual sections of the site as they are drafted. ("Latest version" refers to whichever version is current at the time that EPA reviews each report.)

The presentation suggested that the Navy should be using standards with exposure scenarios that reflected only one end of the range that EPA considers protective.

In fact, the Navy and EPA assessments of cleanup needs are already based on scenario assumptions of exposure that are higher than would be realistic. In part, this is because the assumptions of exposure do not take into account the protective cover. In addition, EPA considers the protective range to refer to a probability that a person exposed to radioactive and chemical contaminants will have between one in ten thousand and one in a million greater chance of developing cancer. The presentation did not reflect this complete range. Finally, the Navy routinely cleans up radiation to levels within the protective range, even with the current version of worst case scenario assumptions.

The presentation criticized the fact that the Navy's documents reference several different cleanup requirements.

In fact, Navy cleanup documents showed requirements from multiple agencies that might apply to particular cleanups. The Navy must meet requirements specific to each of those agencies – including the most strict. Some of the standards that the Navy must meet may be less strict than EPA's, but the Navy still referenced them in the documents to show that by complying with stricter standards, they also meet other requirements. The final cleanup requirements were selected in several Records of Decision that were presented in a series of public meetings, allowed at least 30 days for public comment, and then finalized.

Response sent 3/25/16

Q. Can you please let us know what if any action the US EPA has taken in response to the admission by Navy contractor Tetra Tech that it falsified data and mishandled soil samples on Hunters Point? Has the US EPA reviewed any samples or required a resampling of any parcels on Hunters Point? If so, who performed the review? What was found?

A. The Navy is the lead agency responsible for the investigation and cleanup of the Hunters Point Naval Shipyard (HPNS). EPA and its state regulatory agency partners oversee and enforce Navy compliance with the Comprehensive Environmental Response Compensation and Liability Act (commonly called the Superfund law) to ensure the cleanup at HPNS protects human health and the environment.

In 2012, the Navy's internal quality control review of work by its contractor, Tetra Tech, discovered discrepancies from the results they would have expected in some HPNS soil samples taken after removal actions. Subsequently, Tetra Tech conducted an internal investigation, resampled the areas of concern, and excavated soil that had levels of contamination above health-based cleanup goals. The Navy hired an independent contractor to oversee work of Tetra

Tetra Tech and other contractors at HPNS. Tetra Tech summarized their actions in a report to the Navy dated April 2014.

EPA—along with the California Department of Public Health (CDPH) and the California Department of Toxic Substances Control (DTSC)—reviewed the sampling results in the April 2014 report carefully. No cleanup decisions had been made using the questionable data and future cleanup decisions will be based on the corrected data.

EPA will continue to closely review information about any new allegations that come to light and to monitor the actions of the Navy and other agencies with regard to work by Tetra Tech to inform any further EPA action.

Other agencies also play roles related to radiation at HPNS. For example, the U.S. Nuclear Regulatory Commission (NRC) and CDPH oversee the licensing of radiation cleanup service providers, such as Tetra Tech. After concluding its investigation of Tetra Tech at HPNS, NRC recently issued a notice of apparent violation and is considering escalated enforcement action.

For more information on the HPNS investigation and cleanup, contact William Franklin, Navy public affairs officer: (619) 524-5433, william.d.franklin@navy.mil.

For more information about Tetra Tech's NRC license, contact Diane Screnci, NRC public affairs officer: 610-337-5330.